A precise determination of T_c in QCD from scaling

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Abstract

Existing lattice data on the QCD phase transition are re-analyzed. $T_c/\Lambda_{\overline{MS}}$ is found to scale for lattices with only 3 time slices. As a result, this ratio can be calculated with a precision of better than four parts in a thousand in the pure gauge theory. Another implication of scaling is that the equation of state can be found reliably on fairly coarse lattices. We also give a preliminary estimate of $T_c/\Lambda_{\overline{MS}}$ for QCD with dynamical quarks.

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